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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,584	03/28/2001	Narutoshi Fukuzawa	P107424-00024	3657

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 08/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/818,584

Applicant(s)

FUKUZAWA, NARUTOSHI

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/28/01 & 1/8/02.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 & 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 5 should state that silver is **the** major component.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Uchiyama et al. '351.

See example 1, sample 5, which coats a pure silver reflective layer at a pressure of 1.0 Pa and a power of 11.0 W/cm<sup>2</sup>.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '122, in view of Matsumaru et al. EP 0508478 or Hijakata et al. '886.

Usami et al. '122 teach optical recording media, which have, grooves of depths of most preferably 150-200 nm, widths of 200-900 nm (0.2-0.9 microns) and a pitch of 0.3 to 0.9 microns. (6/5-18) The use of various dyes including cyanine and azo dyes is disclosed (6/19-34 and examples) The use of silver reflective layers and methods for making them including sputtering and ion plating is disclosed. (7/23-36). The formation of protective layer on these is also disclosed. (7/37-64).

Matsumaru et al. EP 0508478 describes the in table 2, the formation of silver films having high reflectivity using ion beam sputtering. The pressure is disclosed as  $2.0 \times 10^{-5}$  Torr in example 1. (7/5). The silver layer formed in tables 2 has the highest reflectivity of any of the layers.

Hijakata et al. '886 teach the formation of corrosion resistant silver-magnesium alloys for optical recording media. (2/29) These films are formed at sputtering pressures of 1 mTorr. (9/19-43).

It would have been obvious to form media within the scope of the teachings of Usami et al. '122, particularly those having the ability to store the higher density DVD formats, using

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silver based films formed using the processes of Matsumaru et al. EP 0508478 or Hijakata et al. '886 to gain the higher reflectance of Matsumaru et al. EP 0508478, or the higher corrosion resistance of Hijakata et al. '886.

The examiner notes that the criticality of the upper range pressure boundary has been established for DC sputtering in table on page 29, but notes that the criticality of the lower range has not been shown. From the data in that table and the teachings of the references it seems that increased power and lower gas pressures result in a rough or granular silver film, which inherently would preferentially form a Ag(200) crystalline structure.

5. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiyama et al. EP 0987700.

Kamiyama et al. EP 0987700 teaches forming optical recording media which having the structure shown in figure 3, where the recording layer is coated with a reflective layer, such as silver and a protective layer. The use of silver is disclosed as is the use of sputtering at 1 mTorr. [0038-0039].

It would have been obvious to one skilled in the art to use the sputtering methods at 1 mTorr (~0.13 Pa) to form an optical recording medium with a silver reflective layer.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kamezaki et al. '969 teach that sputtering can be used to form reflective layers of different densities. (7/12-18).

Nakashima et al. '398 describe the morphology of Ag(200) (8/45-53).

Werner et al. '332 teach the morphology of sputtered films. (5/38-68).

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Florczak et al. '382 teaches sputtering AgAu layers at 2 mTorr. (example 1).

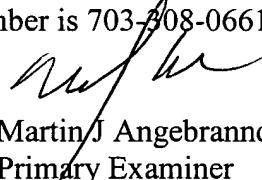
Yamada et al. JP 07-014221 teaches sputtering metal reflective layers at various rates.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranntt whose telephone number is 703-308-4397.

The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebranntt  
Primary Examiner  
Art Unit 1756

July 31, 2002